

STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH

LOCATION: MW-411D

COMPOUND: Trichloroethene

COMMENT:

Order	Sample Concentration
1	340
2	430
3	440
4	860
5	910
6	1100
7	1100
8	1100
9	1200
10	1200
11	1200
12	1300
13	1300
14	1460
15	1500
16	1710
17	2000
18	2240
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Normal Distribution	
Probability	Quartile
5.3	-1.62
10.5	-1.25
15.8	-1.00
21.1	-0.80
26.3	-0.63
31.6	-0.48
36.8	-0.34
42.1	-0.20
47.4	-0.07
52.6	0.07
57.9	0.20
63.2	0.34
68.4	0.48
73.7	0.63
78.9	0.80
84.2	1.00
89.5	1.25
94.7	1.62

Shapiro-Wilk Normality Test		
Residual	Coefficient (a)	Product (b)
1900.00	0.4886	928.34
1570.00	0.3253	510.72
1270.00	0.2553	324.23
640.00	0.2027	129.73
550.00	0.1587	87.29
200.00	0.1197	23.94
200.00	0.0837	16.74
100.00	0.0496	4.96
0.00	0.0163	0.00
	0.0000	
	0.0000	
	0.0000	
	0.0000	
	0.0000	
	0.0000	

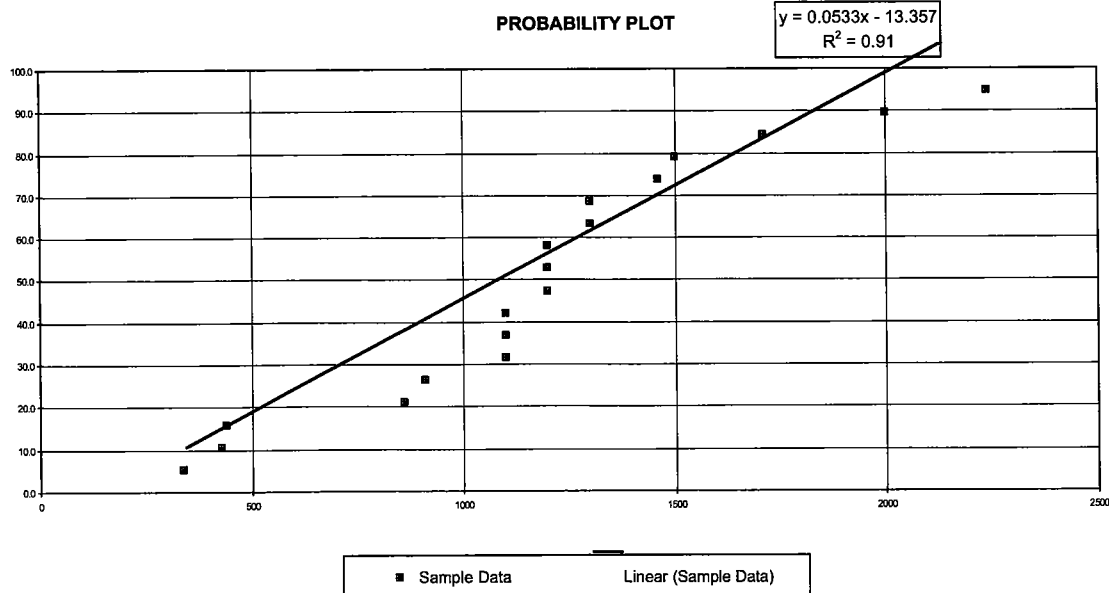
Shapiro-Wilk Sum:	2025.945
Shapiro-Wilk W:	0.955
Critical Value:	5%
Shapiro-Wilk Comparison W:	0.8970

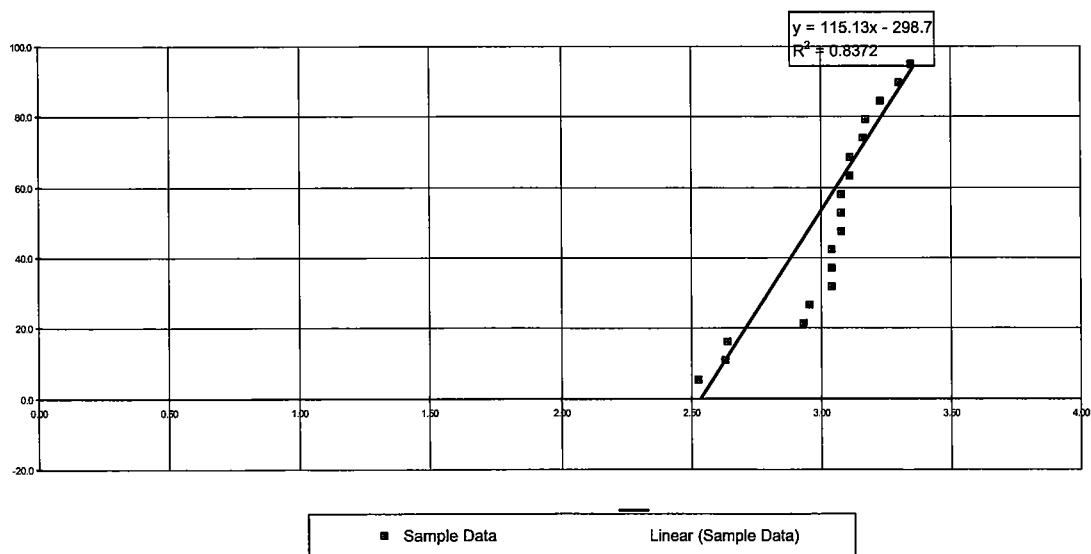
Normality?: Appears Normally Distributed

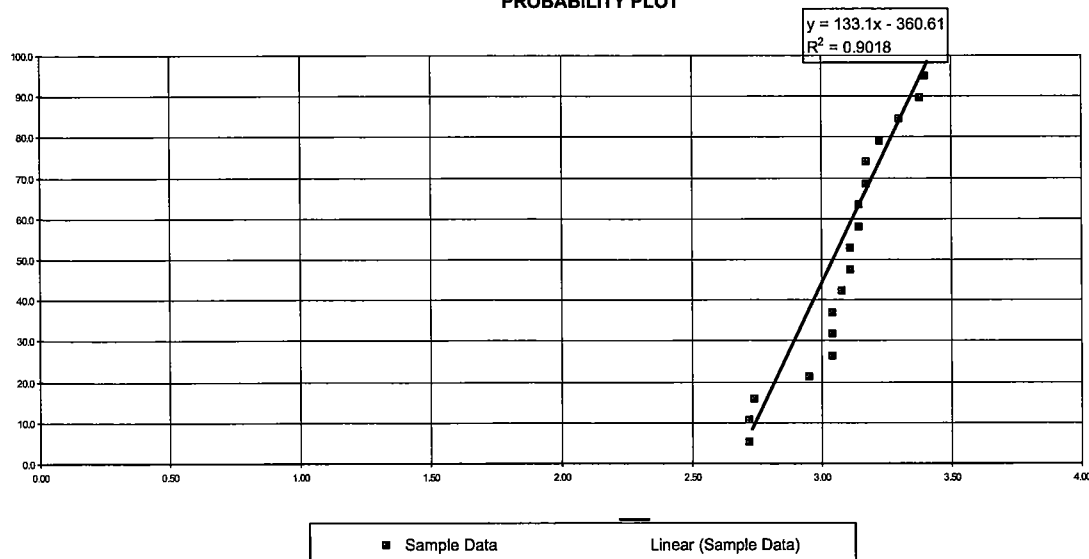
Number of Samples:	18
Sample Mean:	1188.333
Sample Standard Deviation:	502.737

25% Quartile:	957.5
50% Quartile (median):	1200.0
75% Quartile:	1420.0
Inter-Quartile Range:	462.5
Upper Cutoff:	2113.8

Required Level of Confidence:	95%
Upper Confidence Limit:	1394.47
Upper Tolerance Limit:	2086.9







STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-413D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Concentration
1	0.11
2	0.11
3	0.91
4	18.3
5	22
6	27
7	40
8	76
9	85
10	88
11	91
12	100
13	107
14	121
15	130
16	139.00
17	140.00
18	150.00
19	200.00
20	200.00
21	204.00
22	321.00
23	460.00
24	613.00
25	1210.00
26	1790.00
27	3680.00
28	
29	
30	

Probability	Quartile
3.6	-1.80
7.1	-1.47
10.7	-1.24
14.3	-1.07
17.9	-0.92
21.4	-0.79
25.0	-0.67
28.6	-0.57
32.1	-0.46
35.7	-0.37
39.3	-0.27
42.9	-0.18
46.4	-0.09
50.0	0.00
53.6	0.09
57.1	0.18
60.7	0.27
64.3	0.37
67.9	0.46
71.4	0.57
75.0	0.67
78.6	0.79
82.1	0.92
85.7	1.07
89.3	1.24
92.9	1.47
96.4	1.80

Residual	Coefficient (a)	Product (b)
3679.89	0.4366	1606.64
1789.89	0.3018	540.19
1209.09	0.2522	304.93
594.70	0.2152	127.98
438.00	0.1848	80.94
294.00	0.1584	46.57
164.00	0.1346	22.07
124.00	0.1128	13.99
115.00	0.0923	10.61
62.00	0.0728	4.51
49.00	0.0540	2.65
39.00	0.0358	1.40
23.00	0.0178	0.41
	0.0000	
	0.0000	

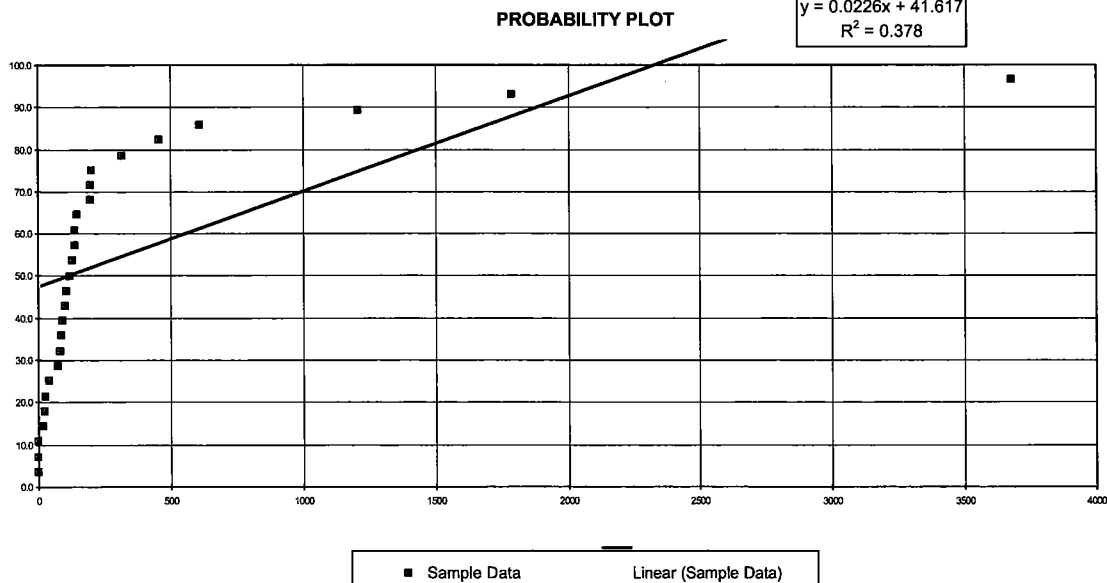
Shapiro-Wilk Sum:	2762.894
Shapiro-Wilk W:	0.494
Critical Value:	5%
Shapiro-Wilk Comparison W:	0.9230

Normality?: Does Not Appear Normally Distributed

Number of Samples:	27
Sample Mean:	370.868
Sample Standard Deviation:	771.002

25% Quartile:	58.0
50% Quartile(median):	121.0
75% Quartile:	202.0
Inter-Quartile Range:	144.0
Upper Cutoff:	418.0

Required Level of Confidence:	95%
Upper Confidence Limit:	623.95
Upper Tolerance Limit:	1710.0



STATISTICAL EVALUATION USING LOG-NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-413D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Log Conc.
1	-0.96
2	-0.96
3	-0.04
4	1.26
5	1.34
6	1.43
7	1.60
8	1.88
9	1.93
10	1.94
11	1.96
12	2.00
13	2.03
14	2.08
15	2.11
16	2.14
17	2.15
18	2.18
19	2.30
20	2.30
21	2.31
22	2.51
23	2.66
24	2.79
25	3.08
26	3.25
27	3.57
28	
29	
30	

Probability	Quartile
3.6	-1.80
7.1	-1.47
10.7	-1.24
14.3	-1.07
17.9	-0.92
21.4	-0.79
25.0	-0.67
28.6	-0.57
32.1	-0.46
35.7	-0.37
39.3	-0.27
42.9	-0.18
46.4	-0.09
50.0	0.00
53.6	0.09
57.1	0.18
60.7	0.27
64.3	0.37
67.9	0.46
71.4	0.57
75.0	0.67
78.6	0.79
82.1	0.92
85.7	1.07
89.3	1.24
92.9	1.47
96.4	1.80

Residual	Coefficient (a)	Product (b)
4.52	0.4366	1.98
4.21	0.3018	1.27
3.12	0.2522	0.79
1.53	0.2152	0.33
1.32	0.1848	0.24
1.08	0.1584	0.17
0.71	0.1346	0.10
0.42	0.1128	0.05
0.37	0.0923	0.03
0.23	0.0728	0.02
0.19	0.0540	0.01
0.14	0.0358	0.01
0.08	0.0178	0.00
	0.0000	
	0.00	

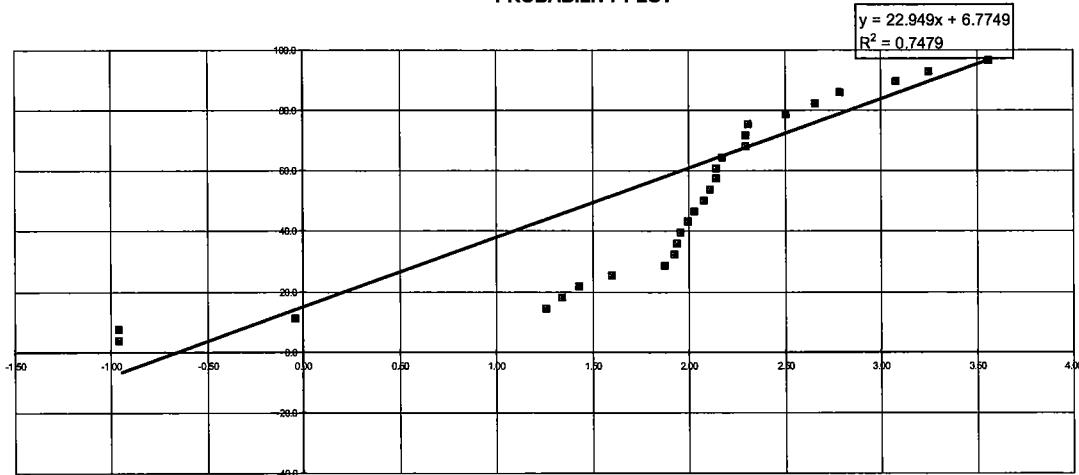
Shapiro-Wilk Sum:	4.987
Shapiro-Wilk W:	0.838
Critical Value:	5.0%
Shapiro-Wilk Comparison W:	0.9230

Normality?: Does Not Appear LogNormally Distributed

Number of Samples:	27
Sample Mean:	1.884
Sample Standard Deviation:	1.068
25% Quartile:	58.0
50% Quartile(median):	121.0
75% Quartile:	202.0
Inter-Quartile Range:	144.00
Upper Cutoff:	418.00

Required Level of Confidence:	95%
Upper Confidence Limit:	2.23
Upper Tolerance Limit:	3.74
	5481.9

PROBABILITY PLOT



■ Sample Data — Linear (Sample Data)

STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH

LOCATION: MW-414D

COMPOUND: Trichloroethene

COMMENT:

Order	Sample Concentration
1	0.05
2	0.11
3	0.11
4	0.11
5	0.11
6	0.11
7	0.11
8	0.14
9	0.5
10	0.53
11	0.56
12	0.59
13	0.78
14	1
15	1.5
16	2.50
17	2.50
18	3.70
19	4.80
20	6.60
21	6.70
22	30.20
23	116.00
24	352.00
25	377.00
26	
27	
28	
29	
30	

Normal Distribution	
Probability	Quartile
3.8	-1.77
7.7	-1.43
11.5	-1.20
15.4	-1.02
19.2	-0.87
23.1	-0.74
26.9	-0.62
30.8	-0.50
34.6	-0.40
38.5	-0.29
42.3	-0.19
46.2	-0.10
50.0	0.00
53.8	0.10
57.7	0.19
61.5	0.29
65.4	0.40
69.2	0.50
73.1	0.62
76.9	0.74
80.8	0.87
84.6	1.02
88.5	1.20
92.3	1.43
96.2	1.77

Shapiro-Wilk Normality Test		
Residual	Coefficient (a)	Product (b)
376.95	0.4450	167.74
351.89	0.3069	108.00
115.89	0.2543	29.47
30.09	0.2148	6.46
6.59	0.1822	1.20
6.49	0.1539	1.00
4.69	0.1283	0.60
3.56	0.1046	0.37
2.00	0.0823	0.16
1.97	0.0610	0.12
0.94	0.0403	0.04
0.41	0.0200	0.01
	0.0000	
	0.0000	
	0.0000	

Shapiro-Wilk Sum: 315.176

Shapiro-Wilk W: 0.401

Critical Value: 5%

Shapiro-Wilk Comparison W: 0.9180

Normality?: Does Not Appear Normally Distributed

Number of Samples: 25

Sample Mean: 36.332

Sample Standard Deviation: 101.559

25% Quartile: 0.1

50% Quartile(median): 0.8

75% Quartile: 4.8

Inter-Quartile Range: 4.7

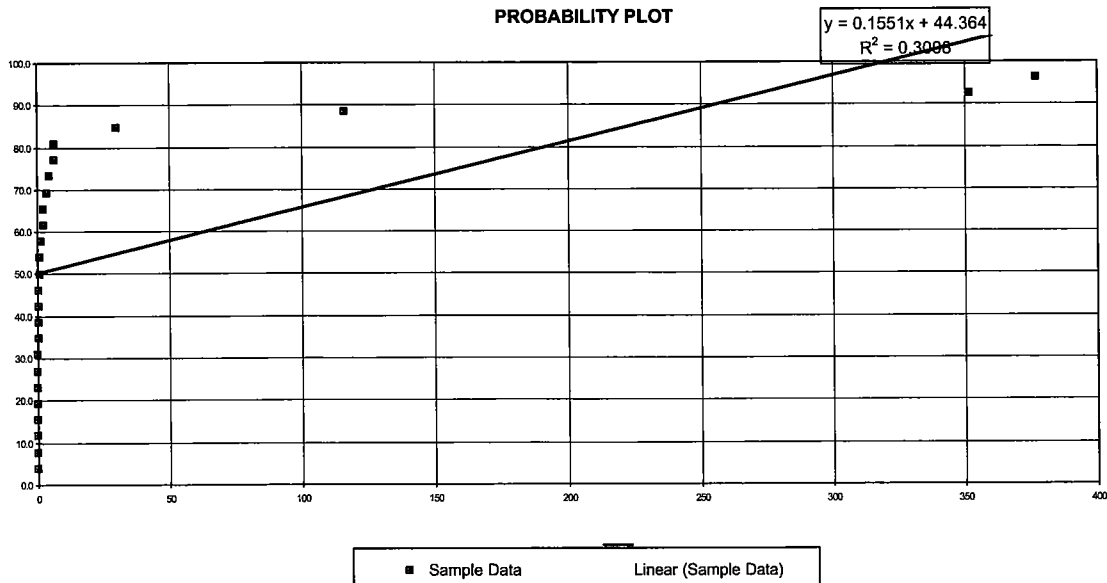
Upper Cutoff: 11.8

Required Level of Confidence: 95%

Upper Confidence Limit: 71.08

Upper Tolerance Limit: 213.5

PROBABILITY PLOT



STATISTICAL EVALUATION USING LOG-NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-414D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Log Conc.
1	-1.30
2	-0.96
3	-0.96
4	-0.96
5	-0.96
6	-0.96
7	-0.96
8	-0.85
9	-0.30
10	-0.28
11	-0.25
12	-0.23
13	-0.11
14	0.00
15	0.18
16	0.40
17	0.40
18	0.57
19	0.68
20	0.82
21	0.83
22	1.48
23	2.06
24	2.55
25	2.58
26	
27	
28	
29	
30	

Normal Distribution	
Probability	Quartile
3.8	-1.77
7.7	-1.43
11.5	-1.20
15.4	-1.02
19.2	-0.87
23.1	-0.74
26.9	-0.62
30.8	-0.50
34.6	-0.40
38.5	-0.29
42.3	-0.19
46.2	-0.10
50.0	0.00
53.8	0.10
57.7	0.19
61.5	0.29
65.4	0.40
69.2	0.50
73.1	0.62
76.9	0.74
80.8	0.87
84.6	1.02
88.5	1.20
92.3	1.43
96.2	1.77

Shapiro-Wilk Normality Test		
Residual	Coefficient (a)	Product (b)
3.88	0.4450	1.73
3.51	0.3069	1.08
3.02	0.2543	0.77
2.44	0.2148	0.52
1.78	0.1822	0.33
1.78	0.1539	0.27
1.64	0.1283	0.21
1.42	0.1046	0.15
0.70	0.0823	0.06
0.67	0.0610	0.04
0.43	0.0403	0.02
0.23	0.0200	0.00
	0.0000	
	0.0000	
	0.00	

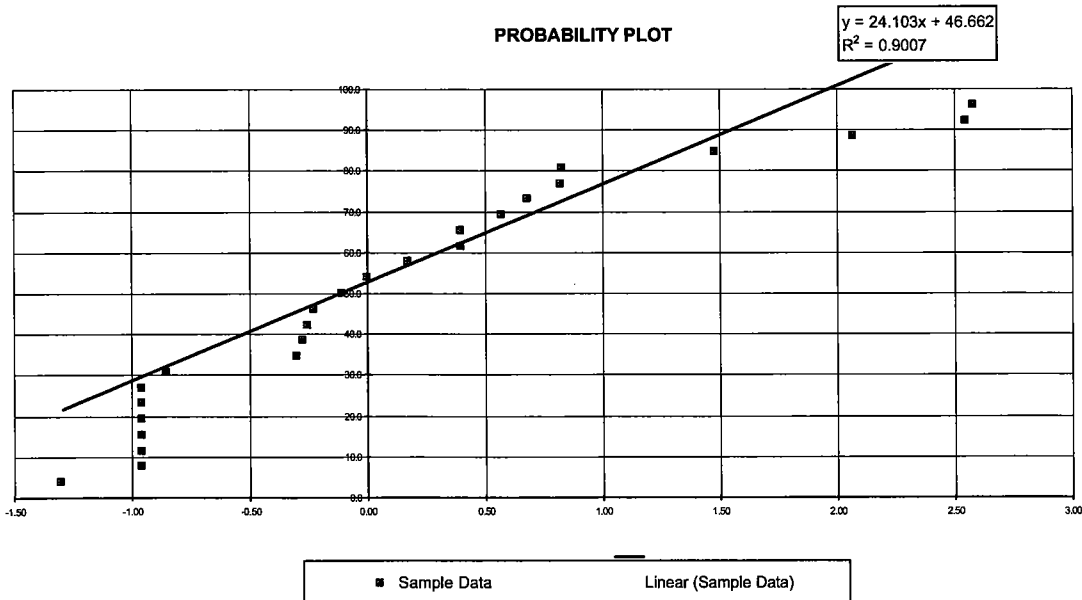
Shapiro-Wilk Sum:	5.172
Shapiro-Wilk W:	0.897
Critical Value:	5.0%
Shapiro-Wilk Comparison W:	0.9180

Normality?: Does Not Appear LogNormally Distributed

log()	
Number of Samples:	25
Sample Mean:	0.138
Sample Standard Deviation:	1.115
25% Quartile:	
50% Quartile (median):	
75% Quartile:	
Inter-Quartile Range:	
Upper Cutoff:	

	log()	Natural Scale
Required Level of Confidence:	95%	
Upper Confidence Limit:	0.52	
Upper Tolerance Limit:	2.08	121.1

PROBABILITY PLOT



STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-416D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Concentration
1	0.05
2	0.11
3	0.11
4	0.11
5	0.11
6	0.11
7	0.11
8	0.155
9	0.22
10	0.25
11	0.42
12	0.88
13	2.5
14	2.5
15	2.5
16	3
17	3
18	3.00
19	3.40
20	5.10
21	5.40
22	5.60
23	6.00
24	6.10
25	6.30
26	29.20
27	
28	
29	
30	

Probability	Quartile
3.7	-1.79
7.4	-1.45
11.1	-1.22
14.8	-1.04
18.5	-0.90
22.2	-0.76
25.9	-0.65
29.6	-0.54
33.3	-0.43
37.0	-0.33
40.7	-0.23
44.4	-0.14
48.1	-0.05
51.9	0.05
55.6	0.14
59.3	0.23
63.0	0.33
66.7	0.43
70.4	0.54
74.1	0.65
77.8	0.76
81.5	0.90
85.2	1.04
88.9	1.22
92.6	1.45
96.3	1.79

Residual	Coefficient (a)	Product (b)
29.15	0.4407	12.85
6.19	0.3043	1.88
5.99	0.2533	1.52
5.89	0.2151	1.27
5.49	0.1836	1.01
5.29	0.1563	0.83
4.99	0.1316	0.66
3.25	0.1089	0.35
2.78	0.0876	0.24
2.35	0.0672	0.16
2.18	0.0476	0.10
1.62	0.0284	0.05
0.00	0.0094	0.00
	0.0000	
	0.0000	

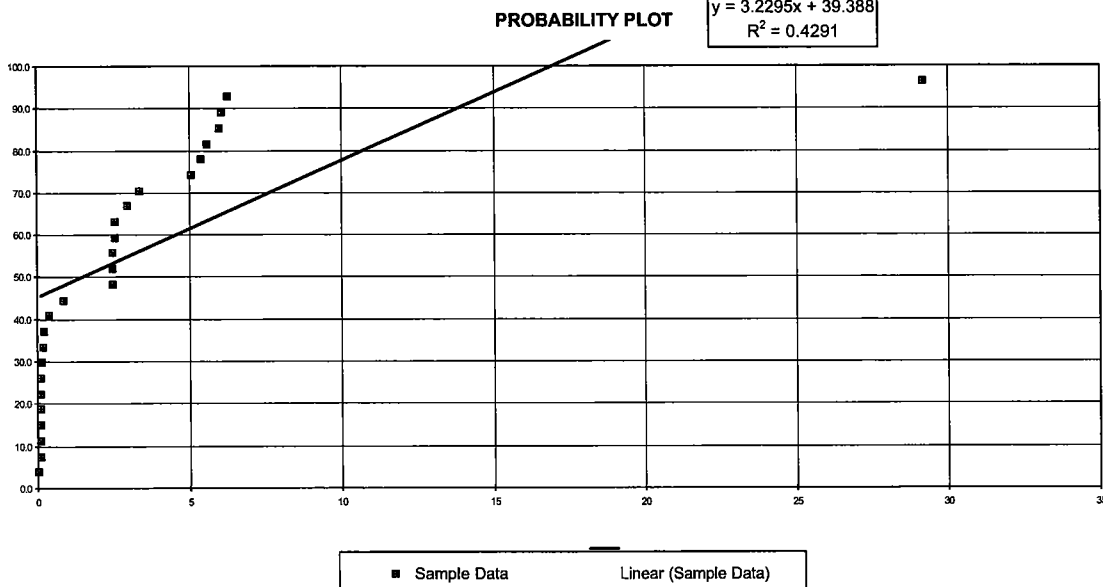
Shapiro-Wilk Sum:	20.910
Shapiro-Wilk W:	0.530
Critical Value:	5%
Shapiro-Wilk Comparison W:	0.9200

Normality?: Does Not Appear Normally Distributed

Number of Samples:	26
Sample Mean:	3.286
Sample Standard Deviation:	5.746

25% Quartile:	0.1
50% Quartile (median):	2.5
75% Quartile:	4.7
Inter-Quartile Range:	4.6
Upper Cutoff:	11.5

Required Level of Confidence:	95%
Upper Confidence Limit:	5.21
Upper Tolerance Limit:	13.3



STATISTICAL EVALUATION USING LOG-NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-416D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Log Conc.
1	-1.30
2	-0.96
3	-0.96
4	-0.96
5	-0.96
6	-0.96
7	-0.96
8	-0.81
9	-0.66
10	-0.60
11	-0.38
12	-0.06
13	0.40
14	0.40
15	0.40
16	0.41
17	0.41
18	0.48
19	0.53
20	0.71
21	0.73
22	0.75
23	0.78
24	0.79
25	0.80
26	1.47
27	
28	
29	
30	

Probability	Quartile
3.7	-1.79
7.4	-1.45
11.1	-1.22
14.8	-1.04
18.5	-0.90
22.2	-0.76
25.9	-0.65
29.6	-0.54
33.3	-0.43
37.0	-0.33
40.7	-0.23
44.4	-0.14
48.1	-0.05
51.9	0.05
55.6	0.14
59.3	0.23
63.0	0.33
66.7	0.43
70.4	0.54
74.1	0.65
77.8	0.76
81.5	0.90
85.2	1.04
88.9	1.22
92.6	1.45
96.3	1.79

Residual	Coefficient (a)	Product (b)
2.77	0.4407	1.22
1.76	0.3043	0.53
1.74	0.2533	0.44
1.74	0.2151	0.37
1.71	0.1836	0.31
1.69	0.1563	0.26
1.67	0.1316	0.22
1.34	0.1089	0.15
1.13	0.0876	0.10
1.02	0.0672	0.07
0.79	0.0476	0.04
0.45	0.0284	0.01
0.00	0.0094	0.00
	0.0000	
	0.00	

Shapiro-Wilk Sum: 3.731

Shapiro-Wilk W: 0.885

Critical Value: 5.0%

Shapiro-Wilk Comparison W: 0.9200

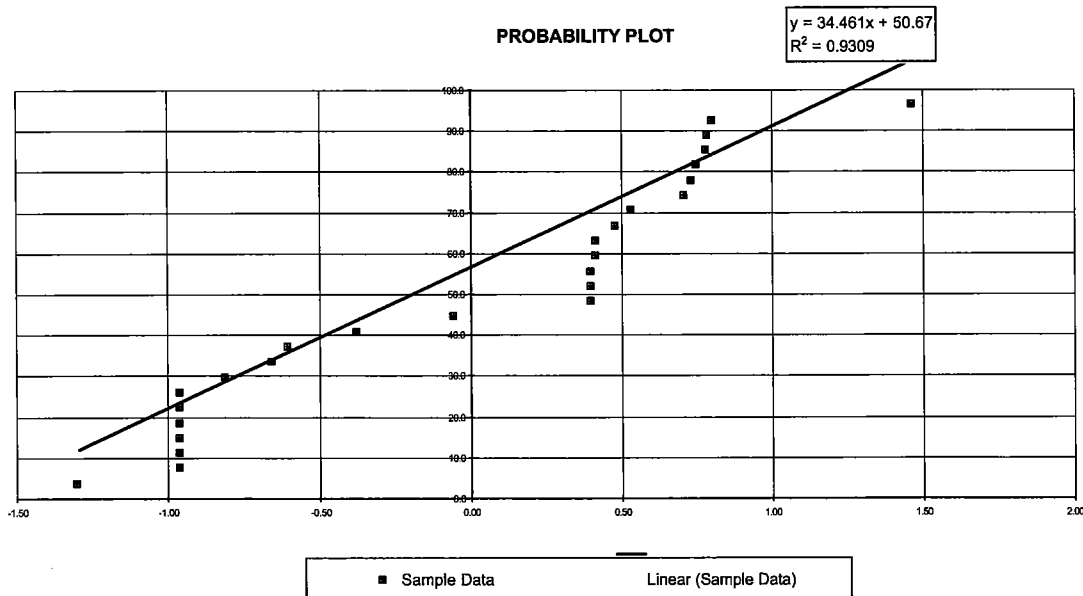
Normality?: Does Not Appear LogNormally Distributed

log()
Number of Samples: 26
Sample Mean: -0.019
Sample Standard Deviation: 0.793

25% Quartile: 0.1
50% Quartile(median): 2.5
75% Quartile: 4.7
Inter-Quartile Range: 4.55
Upper Cutoff: 11.51

log() Natural Scale
Required Level of Confidence: 95%
Upper Confidence Limit: 0.25
Upper Tolerance Limit: 1.36 23.0

PROBABILITY PLOT



STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-417D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Concentration
1	0.07
2	0.085
3	0.11
4	0.11
5	0.11
6	0.11
7	0.11
8	0.155
9	0.25
10	0.32
11	0.36
12	0.37
13	0.96
14	0.96
15	1.6
16	3
17	3
18	2.50
19	2.50
20	2.60
21	3.50
22	7.40
23	8.00
24	9.00
25	9.00
26	9.32
27	
28	
29	
30	

Probability	Quartile
3.7	-1.79
7.4	-1.45
11.1	-1.22
14.8	-1.04
18.5	-0.90
22.2	-0.76
25.9	-0.65
29.6	-0.54
33.3	-0.43
37.0	-0.33
40.7	-0.23
44.4	-0.14
48.1	-0.05
51.9	0.05
55.6	0.14
59.3	0.23
63.0	0.33
66.7	0.43
70.4	0.54
74.1	0.65
77.8	0.76
81.5	0.90
85.2	1.04
88.9	1.22
92.6	1.45
96.3	1.79

Residual	Coefficient (a)	Product (b)
9.25	0.4407	4.08
8.92	0.3043	2.71
8.89	0.2533	2.25
7.89	0.2151	1.70
7.29	0.1836	1.34
3.39	0.1563	0.53
2.49	0.1316	0.33
2.35	0.1089	0.26
2.25	0.0876	0.20
2.18	0.0672	0.15
2.14	0.0476	0.10
1.23	0.0284	0.03
0.00	0.0094	0.00
	0.0000	
	0.0000	

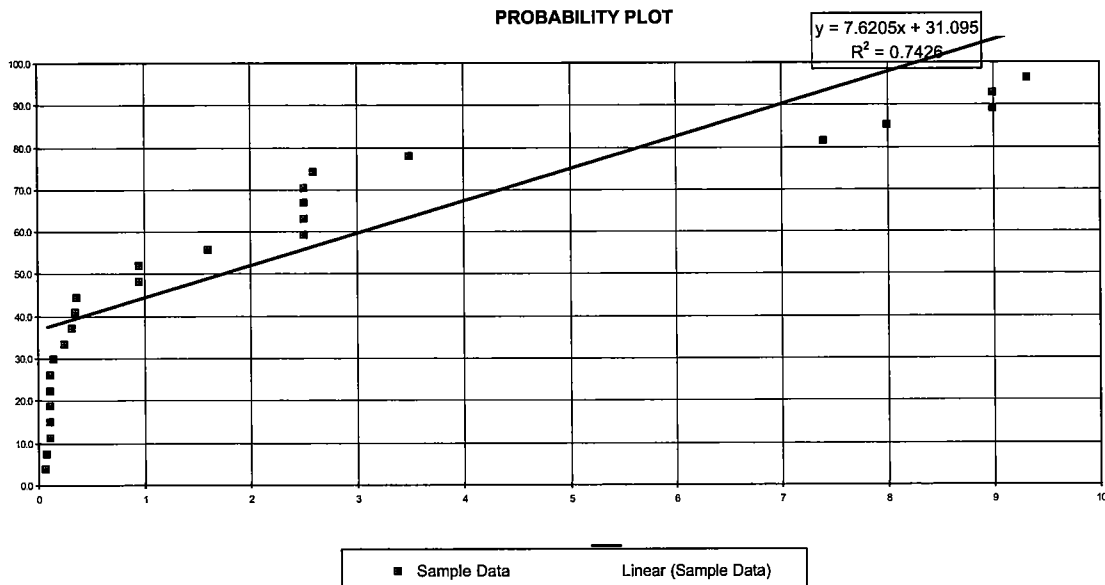
Shapiro-Wilk Sum:	13.670
Shapiro-Wilk W:	0.728
Critical Value:	5%
Shapiro-Wilk Comparison W:	0.9200

Normality?: Does Not Appear Normally Distributed

Number of Samples:	26
Sample Mean:	2.481
Sample Standard Deviation:	3.203

25% Quartile:	0.1
50% Quartile (median):	1.0
75% Quartile:	2.6
Inter-Quartile Range:	2.5
Upper Cutoff:	6.3

Required Level of Confidence:	95%
Upper Confidence Limit:	3.55
Upper Tolerance Limit:	8.1



STATISTICAL EVALUATION USING LOG-NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH

LOCATION: MW-417D

COMPOUND: Trichloroethene

COMMENT:

Order	Sample Log Conc.
1	-1.15
2	-1.07
3	-0.96
4	-0.96
5	-0.96
6	-0.96
7	-0.96
8	-0.81
9	-0.60
10	-0.49
11	-0.44
12	-0.43
13	-0.02
14	-0.02
15	0.20
16	0.40
17	0.40
18	0.40
19	0.40
20	0.41
21	0.54
22	0.87
23	0.90
24	0.95
25	0.95
26	0.97
27	
28	
29	
30	

Probability	Quartile
3.7	-1.79
7.4	-1.45
11.1	-1.22
14.8	-1.04
18.5	-0.90
22.2	-0.76
25.9	-0.65
29.6	-0.54
33.3	-0.43
37.0	-0.33
40.7	-0.23
44.4	-0.14
48.1	-0.05
51.9	0.05
55.6	0.14
59.3	0.23
63.0	0.33
66.7	0.43
70.4	0.54
74.1	0.65
77.8	0.76
81.5	0.90
85.2	1.04
88.9	1.22
92.6	1.45
96.3	1.79

Residual	Coefficient (a)	Product (b)
2.12	0.4407	0.94
2.02	0.3043	0.62
1.91	0.2533	0.48
1.86	0.2151	0.40
1.83	0.1836	0.34
1.50	0.1563	0.23
1.37	0.1316	0.18
1.21	0.1089	0.13
1.00	0.0876	0.09
0.89	0.0672	0.06
0.84	0.0476	0.04
0.64	0.0284	0.02
0.00	0.0094	0.00
	0.0000	
	0.00	

Shapiro-Wilk Sum: 3.526

Shapiro-Wilk W: 0.890

Critical Value: 5.0%

Shapiro-Wilk Comparison W: 0.9200

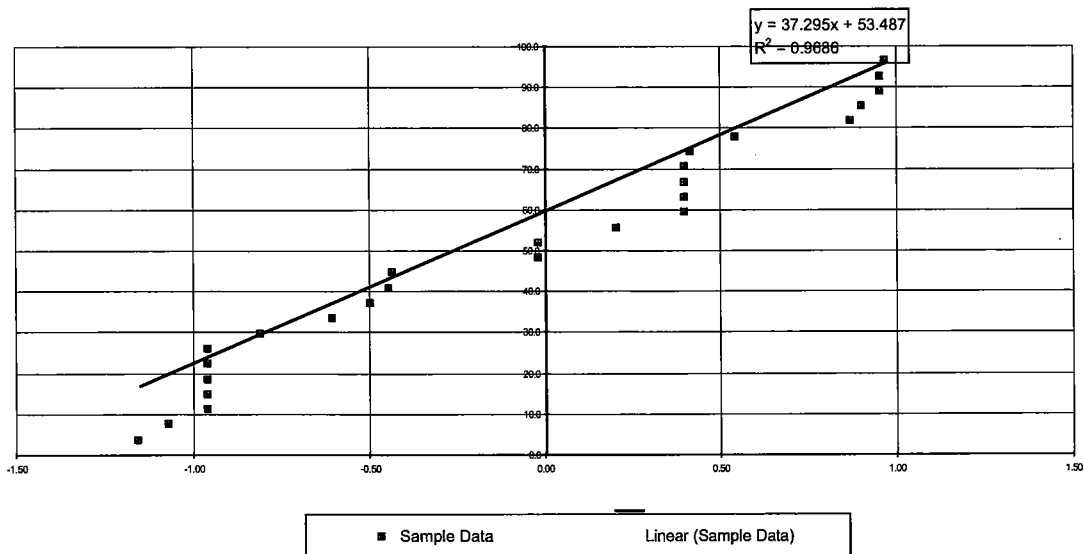
Normality?: Does Not Appear LogNormally Distributed

log()
Number of Samples: 26
Sample Mean: -0.093
Sample Standard Deviation: 0.748

25% Quartile: 0.1
50% Quartile(median): 1.0
75% Quartile: 2.6
Inter-Quartile Range: 2.45
Upper Cutoff: 6.26

log() Natural Scale
Required Level of Confidence: 95%
Upper Confidence Limit: 0.16
Upper Tolerance Limit: 1.21 16.1

PROBABILITY PLOT



STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-418D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Concentration
1	0.11
2	0.14
3	0.31
4	0.37
5	0.60
6	0.80
7	3.40
8	6.80
9	10.00
10	19.00
11	44.00
12	92.00
13	94.00
14	140.00
15	151.00
16	212.00
17	284.00
18	341.00
19	350.00
20	700.00
21	1320.00
22	1990.00
23	2800.00
24	3290.00
25	4550.00
26	5950.00
27	
28	
29	
30	

Normal Distribution	
Probability	Quartile
3.7	-1.79
7.4	-1.45
11.1	-1.22
14.8	-1.04
18.5	-0.90
22.2	-0.76
25.9	-0.65
29.6	-0.54
33.3	-0.43
37.0	-0.33
40.7	-0.23
44.4	-0.14
48.1	-0.05
51.9	0.05
55.6	0.14
59.3	0.23
63.0	0.33
66.7	0.43
70.4	0.54
74.1	0.65
77.8	0.76
81.5	0.90
85.2	1.04
88.9	1.22
92.6	1.45
96.3	1.79

Shapiro-Wilk Normality Test		
Residual	Coefficient (a)	Product (b)
5949.89	0.4407	2622.12
4549.86	0.3043	1384.52
3289.70	0.2533	833.28
2799.64	0.2151	602.20
1989.40	0.1836	365.25
1319.20	0.1563	206.19
696.60	0.1316	91.67
343.20	0.1089	37.37
331.00	0.0876	29.00
265.00	0.0672	17.81
168.00	0.0476	8.00
59.00	0.0284	1.68
46.00	0.0094	0.43
	0.0000	
	0.0000	

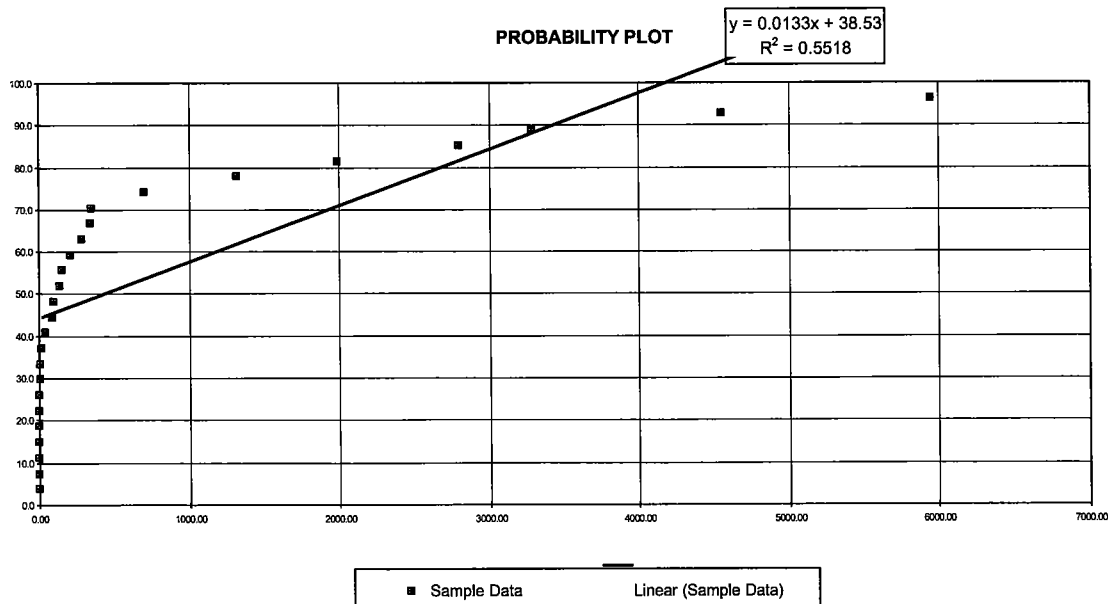
Shapiro-Wilk Sum: 6199.520
Shapiro-Wilk W: 0.618
Critical Value: 5%
Shapiro-Wilk Comparison W: 0.9200

Normality?: Does Not Appear Normally Distributed

Number of Samples: 26
Sample Mean: 859.597
Sample Standard Deviation: 1577.042

25% Quartile: 4.3
50% Quartile (median): 117.0
75% Quartile: 612.5
Inter-Quartile Range: 608.3
Upper Cutoff: 1524.9

Required Level of Confidence: 95%
Upper Confidence Limit: 1387.90
Upper Tolerance Limit: 3604.7



STATISTICAL EVALUATION USING LOG-NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-418D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Log Conc.
1	-0.96
2	-0.85
3	-0.52
4	-0.44
5	-0.22
6	-0.10
7	0.53
8	0.83
9	1.00
10	1.28
11	1.64
12	1.96
13	1.97
14	2.15
15	2.18
16	2.33
17	2.45
18	2.53
19	2.54
20	2.85
21	3.12
22	3.30
23	3.45
24	3.52
25	3.66
26	3.77
27	
28	
29	
30	

Probability	Quartile
3.7	-1.79
7.4	-1.45
11.1	-1.22
14.8	-1.04
18.5	-0.90
22.2	-0.76
25.9	-0.65
29.6	-0.54
33.3	-0.43
37.0	-0.33
40.7	-0.23
44.4	-0.14
48.1	-0.05
51.9	0.05
55.6	0.14
59.3	0.23
63.0	0.33
66.7	0.43
70.4	0.54
74.1	0.65
77.8	0.76
81.5	0.90
85.2	1.04
88.9	1.22
92.6	1.45
96.3	1.79

Residual	Coefficient (a)	Product (b)
4.73	0.4407	2.09
4.51	0.3043	1.37
4.03	0.2533	1.02
3.88	0.2151	0.84
3.52	0.1836	0.65
3.22	0.1563	0.50
2.31	0.1316	0.30
1.71	0.1089	0.19
1.53	0.0876	0.13
1.17	0.0672	0.08
0.68	0.0476	0.03
0.22	0.0284	0.01
0.17	0.0094	0.00
	0.0000	
	0.00	

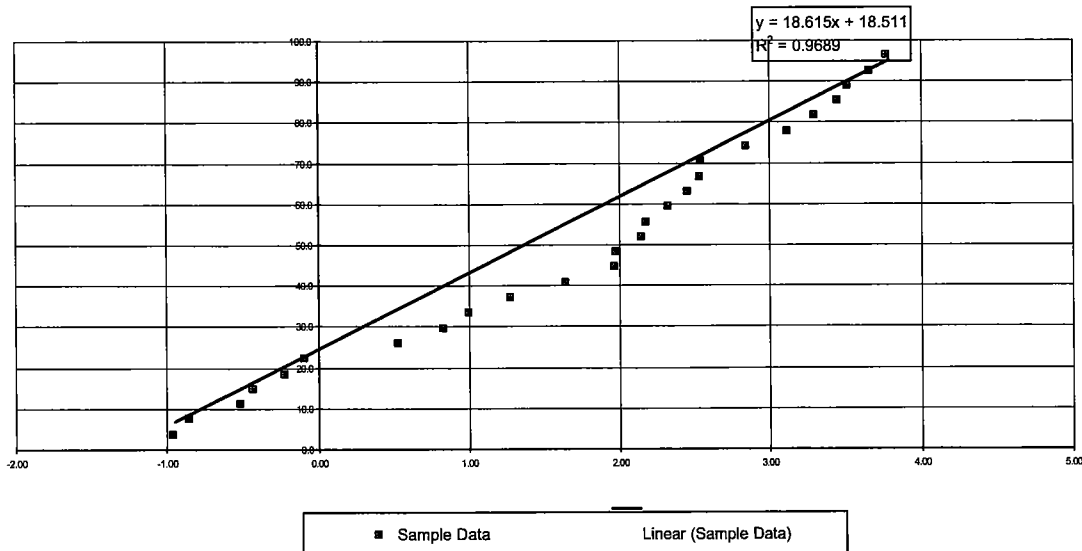
Shapiro-Wilk Sum:	7.210
Shapiro-Wilk W:	0.927
Critical Value:	5.0%
Shapiro-Wilk Comparison W:	0.9200

Normality?: Appears LogNormally Distributed

log()	26
Number of Samples:	1.692
Sample Mean:	1.498
Sample Standard Deviation:	
25% Quartile:	4.3
50% Quartile(median):	117.0
75% Quartile:	612.5
Inter-Quartile Range:	608.25
Upper Cutoff:	1524.88

Required Level of Confidence:	95%
Upper Confidence Limit:	2.19
Upper Tolerance Limit:	4.30
	19907.2

PROBABILITY PLOT



STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-419D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Concentration
1	0.22
2	0.33
3	0.555
4	0.6
5	9.9
6	12.6
7	17.8
8	26
9	28.4
10	34.2
11	36
12	38.8
13	46.5
14	48.8
15	51
16	51
17	53
18	59
19	110
20	148
21	182
22	
23	
24	
25	
26	
27	
28	
29	
30	

Probability	Quartile
4.5	-1.69
9.1	-1.34
13.6	-1.10
18.2	-0.91
22.7	-0.75
27.3	-0.60
31.8	-0.47
36.4	-0.35
40.9	-0.23
45.5	-0.11
50.0	0.00
54.5	0.11
59.1	0.23
63.6	0.35
68.2	0.47
72.7	0.60
77.3	0.75
81.8	0.91
86.4	1.10
90.9	1.34
95.5	1.69

Residual	Coefficient (a)	Product (b)
181.78	0.4643	84.40
147.67	0.3185	47.03
109.45	0.2578	28.21
58.40	0.2119	12.37
43.10	0.1736	7.48
38.40	0.1399	5.37
33.20	0.1092	3.63
22.80	0.0804	1.83
18.10	0.0530	0.96
4.60	0.0263	0.12
	0.0000	
	0.0000	
	0.0000	
	0.0000	
	0.0000	

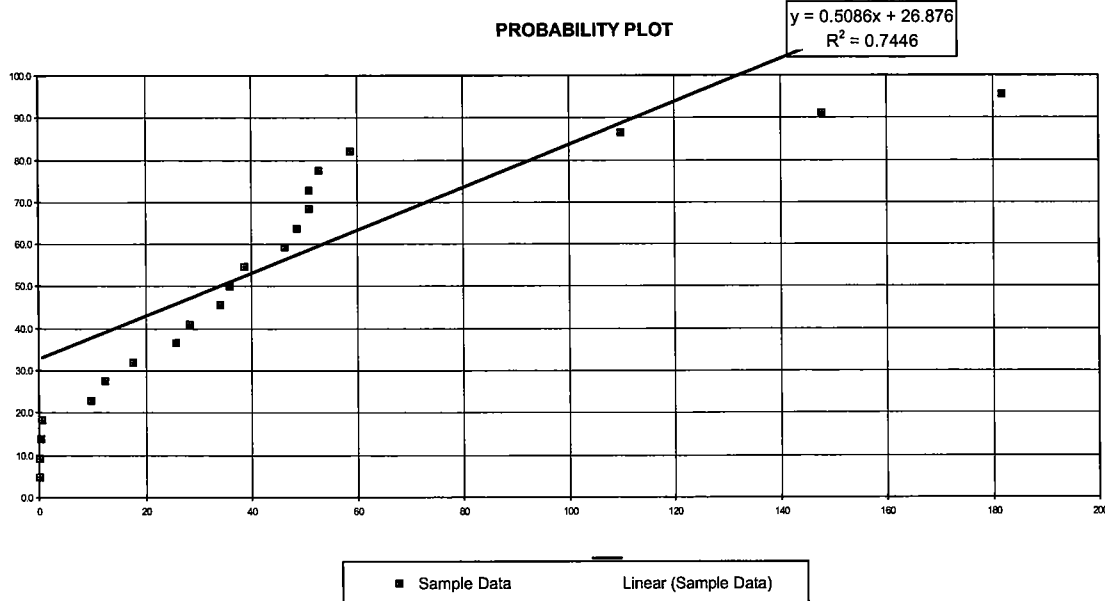
Shapiro-Wilk Sum: 191.416
Shapiro-Wilk W: 0.800
Critical Value: 5%
Shapiro-Wilk Comparison W: 0.9080

Normality?: Does Not Appear Normally Distributed

Number of Samples: 21
Sample Mean: 45.462
Sample Standard Deviation: 47.848

25% Quartile: 12.6
50% Quartile(median): 36.0
75% Quartile: 51.0
Inter-Quartile Range: 38.4
Upper Cutoff: 108.6

Required Level of Confidence: 95%
Upper Confidence Limit: 63.47
Upper Tolerance Limit: 129.9



STATISTICAL EVALUATION USING LOG-NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-419D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Log Conc.
1	-0.66
2	-0.48
3	-0.26
4	-0.22
5	1.00
6	1.10
7	1.25
8	1.41
9	1.45
10	1.53
11	1.58
12	1.59
13	1.67
14	1.69
15	1.71
16	1.71
17	1.72
18	1.77
19	2.04
20	2.17
21	2.26
22	
23	
24	
25	
26	
27	
28	
29	
30	

Normal Distribution	
Probability	Quartile
4.5	-1.69
9.1	-1.34
13.6	-1.10
18.2	-0.91
22.7	-0.75
27.3	-0.60
31.8	-0.47
36.4	-0.35
40.9	-0.23
45.5	-0.11
50.0	0.00
54.5	0.11
59.1	0.23
63.6	0.35
68.2	0.47
72.7	0.60
77.3	0.75
81.8	0.91
86.4	1.10
90.9	1.34
95.5	1.69

Shapiro-Wilk Normality Test		
Residual	Coefficient (a)	Product (b)
2.92	0.4643	1.35
2.65	0.3185	0.84
2.30	0.2578	0.59
1.99	0.2119	0.42
0.73	0.1736	0.13
0.61	0.1399	0.08
0.46	0.1092	0.05
0.27	0.0804	0.02
0.21	0.0530	0.01
0.05	0.0263	0.00
	0.0000	
	0.0000	
	0.0000	
	0.0000	
	0.00	

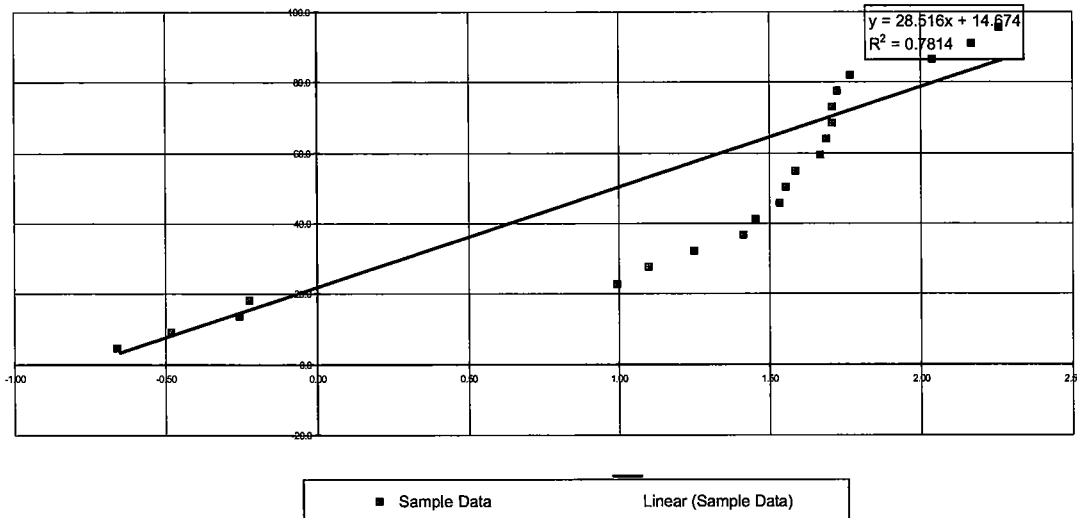
Shapiro-Wilk Sum:	3.510
Shapiro-Wilk W:	0.806
Critical Value:	5.0%
Shapiro-Wilk Comparison W:	0.9080

Normality?: Does Not Appear LogNormally Distributed

Number of Samples:	21
Sample Mean:	1.239
Sample Standard Deviation:	0.874
25% Quartile:	12.6
50% Quartile (median):	36.0
75% Quartile:	51.0
Inter-Quartile Range:	38.40
Upper Cutoff:	108.60

Required Level of Confidence:	95%	log()	Natural Scale
Upper Confidence Limit:	1.57		
Upper Tolerance Limit:	2.78		605.6

PROBABILITY PLOT



STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-420D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Concentration
1	1.20
2	1.65
3	1.85
4	11.00
5	12.00
6	21.00
7	35.00
8	52.00
9	64.50
10	65.00
11	70.00
12	170.00
13	182.00
14	207.00
15	250.00
16	270.00
17	275.00
18	470.00
19	480.00
20	560.00
21	600.00
22	752.00
23	2290.00
24	2500.00
25	3870.00
26	4830.00
27	
28	
29	
30	

Probability	Quartile
3.7	-1.79
7.4	-1.45
11.1	-1.22
14.8	-1.04
18.5	-0.90
22.2	-0.76
25.9	-0.65
29.6	-0.54
33.3	-0.43
37.0	-0.33
40.7	-0.23
44.4	-0.14
48.1	-0.05
51.9	0.05
55.6	0.14
59.3	0.23
63.0	0.33
66.7	0.43
70.4	0.54
74.1	0.65
77.8	0.76
81.5	0.90
85.2	1.04
88.9	1.22
92.6	1.45
96.3	1.79

Residual	Coefficient (a)	Product (b)
4828.80	0.4407	2128.05
3868.35	0.3043	1177.14
2498.15	0.2533	632.78
2279.00	0.2151	490.21
740.00	0.1836	135.86
579.00	0.1563	90.50
525.00	0.1316	69.09
428.00	0.1089	46.61
405.50	0.0876	35.52
210.00	0.0672	14.11
200.00	0.0476	9.52
80.00	0.0284	2.27
25.00	0.0094	0.24
	0.0000	
	0.0000	

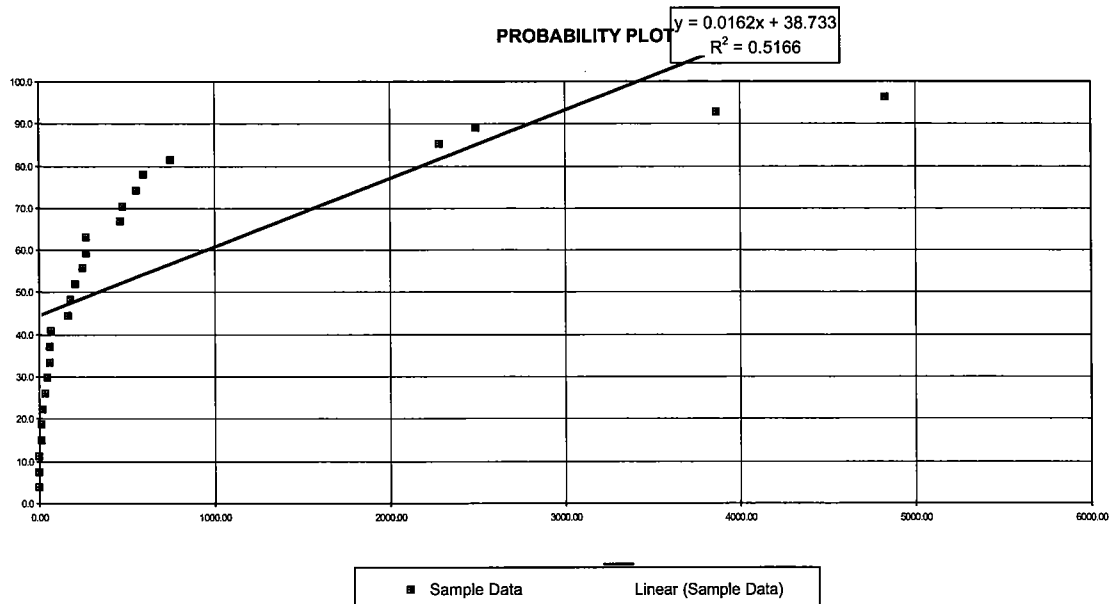
Shapiro-Wilk Sum:	4831.907
Shapiro-Wilk W:	0.594
Critical Value:	5%
Shapiro-Wilk Comparison W:	0.9200

Normality?: Does Not Appear Normally Distributed

Number of Samples:	26
Sample Mean:	693.892
Sample Standard Deviation:	1253.882

25% Quartile:	39.3
50% Quartile(median):	194.5
75% Quartile:	540.0
Inter-Quartile Range:	500.8
Upper Cutoff:	1291.1

Required Level of Confidence:	95%
Upper Confidence Limit:	1113.93
Upper Tolerance Limit:	2876.5



STATISTICAL EVALUATION USING LOG-NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH

LOCATION: MW-420D

COMPOUND: Trichloroethene

COMMENT:

Order	Sample Log Conc.
1	0.08
2	0.22
3	0.27
4	1.04
5	1.08
6	1.32
7	1.54
8	1.72
9	1.81
10	1.81
11	1.85
12	2.23
13	2.26
14	2.32
15	2.40
16	2.43
17	2.44
18	2.67
19	2.68
20	2.75
21	2.78
22	2.88
23	3.36
24	3.40
25	3.59
26	3.68
27	
28	
29	
30	

Probability	Quartile
3.7	-1.79
7.4	-1.45
11.1	-1.22
14.8	-1.04
18.5	-0.90
22.2	-0.76
25.9	-0.65
29.6	-0.54
33.3	-0.43
37.0	-0.33
40.7	-0.23
44.4	-0.14
48.1	-0.05
51.9	0.05
55.6	0.14
59.3	0.23
63.0	0.33
66.7	0.43
70.4	0.54
74.1	0.65
77.8	0.76
81.5	0.90
85.2	1.04
88.9	1.22
92.6	1.45
96.3	1.79

Residual	Coefficient (a)	Product (b)
3.60	0.4407	1.59
3.37	0.3043	1.03
3.13	0.2533	0.79
2.32	0.2151	0.50
1.80	0.1836	0.33
1.46	0.1563	0.23
1.20	0.1316	0.16
0.97	0.1089	0.11
0.86	0.0876	0.08
0.63	0.0672	0.04
0.59	0.0476	0.03
0.17	0.0284	0.00
0.06	0.0094	0.00
	0.0000	
	0.00	

Shapiro-Wilk Sum: 4.878

Shapiro-Wilk W: 0.952

Critical Value: 5.0%

Shapiro-Wilk Comparison W: 0.9200

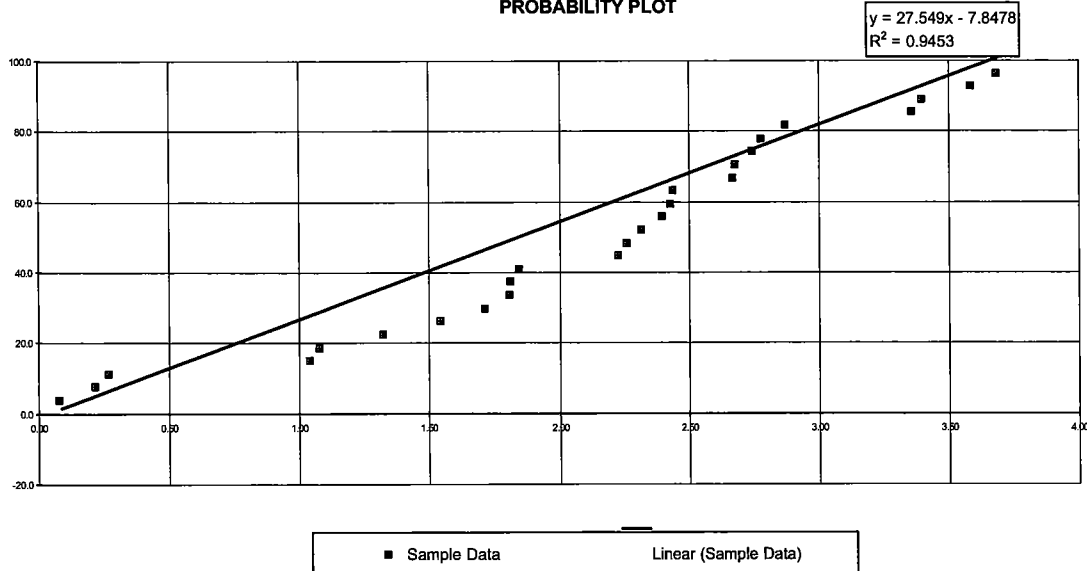
Normality?: Appears LogNormally Distributed

log()
Number of Samples: 26
Sample Mean: 2.100
Sample Standard Deviation: 1.000

25% Quartile: 39.3
50% Quartile(median): 194.5
75% Quartile: 540.0
Inter-Quartile Range: 500.75
Upper Cutoff: 1291.13

log() Natural Scale
Required Level of Confidence: 95%
Upper Confidence Limit: 2.43
Upper Tolerance Limit: 3.84 6918.9

PROBABILITY PLOT



STATISTICAL EVALUATION USING NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH
LOCATION: MW-421D
COMPOUND: Trichloroethene
COMMENT:

Order	Sample Concentration
1	0.05
2	0.065
3	0.11
4	0.11
5	0.11
6	0.11
7	0.22
8	0.35
9	0.42
10	0.42
11	0.77
12	1.8
13	2.5
14	2.5
15	2.5
16	3
17	3
18	6.80
19	7.80
20	8.00
21	8.70
22	
23	
24	
25	
26	
27	
28	
29	
30	

Probability	Quartile
4.5	-1.69
9.1	-1.34
13.6	-1.10
18.2	-0.91
22.7	-0.75
27.3	-0.60
31.8	-0.47
36.4	-0.35
40.9	-0.23
45.5	-0.11
50.0	0.00
54.5	0.11
59.1	0.23
63.6	0.35
68.2	0.47
72.7	0.60
77.3	0.75
81.8	0.91
86.4	1.10
90.9	1.34
95.5	1.69

Residual	Coefficient (a)	Product (b)
8.65	0.4643	4.02
7.94	0.3185	2.53
7.69	0.2578	1.98
6.69	0.2119	1.42
2.39	0.1736	0.41
2.39	0.1399	0.33
2.28	0.1092	0.25
2.15	0.0804	0.17
2.08	0.0530	0.11
1.38	0.0263	0.04
	0.0000	
	0.0000	
	0.0000	
	0.0000	
	0.0000	

Shapiro-Wilk Sum:	11.261
Shapiro-Wilk W:	0.741
Critical Value:	5%
Shapiro-Wilk Comparison W:	0.9080

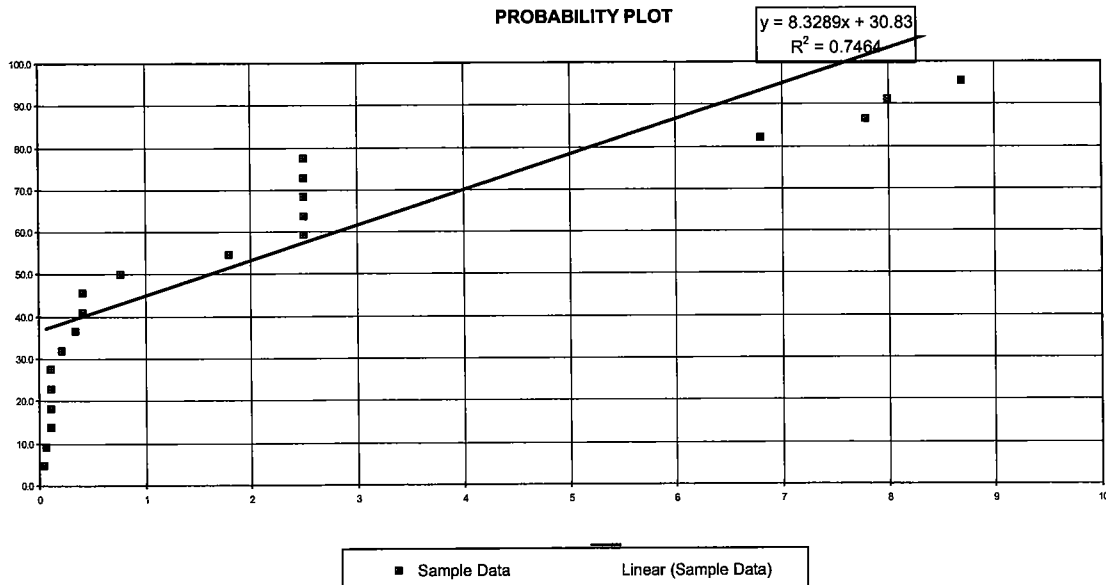
Normality?: Does Not Appear Normally Distributed

Number of Samples: 21
Sample Mean: 2.302
Sample Standard Deviation: 2.926

25% Quartile: 0.1
50% Quartile (median): 0.8
75% Quartile: 2.5
Inter-Quartile Range: 2.4
Upper Cutoff: 6.1

Required Level of Confidence: 95%
Upper Confidence Limit: 3.40
Upper Tolerance Limit: 7.5

PROBABILITY PLOT



STATISTICAL EVALUATION USING LOG-NORMAL DISTRIBUTION

PROJECT: Delphi Corporation - Vandalia Facility - Vandalia, OH

LOCATION: MW-421D

COMPOUND: Trichloroethene

COMMENT:

Order	Sample Log Conc.
1	-1.30
2	-1.19
3	-0.96
4	-0.96
5	-0.96
6	-0.96
7	-0.66
8	-0.46
9	-0.38
10	-0.38
11	-0.11
12	0.26
13	0.40
14	0.40
15	0.40
16	0.40
17	0.40
18	0.83
19	0.89
20	0.90
21	0.94
22	
23	
24	
25	
26	
27	
28	
29	
30	

Probability	Quartile
4.5	-1.69
9.1	-1.34
13.6	-1.10
18.2	-0.91
22.7	-0.75
27.3	-0.60
31.8	-0.47
36.4	-0.35
40.9	-0.23
45.5	-0.11
50.0	0.00
54.5	0.11
59.1	0.23
63.6	0.35
68.2	0.47
72.7	0.60
77.3	0.75
81.8	0.91
86.4	1.10
90.9	1.34
95.5	1.69

Residual	Coefficient (a)	Product (b)
2.24	0.4643	1.04
2.09	0.3185	0.67
1.85	0.2578	0.48
1.79	0.2119	0.38
1.36	0.1736	0.24
1.36	0.1399	0.19
1.06	0.1092	0.12
0.85	0.0804	0.07
0.77	0.0530	0.04
0.63	0.0263	0.02
	0.0000	
	0.0000	
	0.0000	
	0.0000	
	0.00	

Shapiro-Wilk Sum: 3.230

Shapiro-Wilk W: 0.910

Critical Value: 5.0%

Shapiro-Wilk Comparison W: 0.9080

Normality?: Appears LogNormally Distributed

log()
Number of Samples: 21
Sample Mean: -0.119
Sample Standard Deviation: 0.757

25% Quartile: 0.1
50% Quartile (median): 0.8
75% Quartile: 2.5
Inter-Quartile Range: 2.39
Upper Cutoff: 6.09

log() Natural Scale
Required Level of Confidence: 95%
Upper Confidence Limit: 0.17
Upper Tolerance Limit: 1.22 16.5

PROBABILITY PLOT

